

From owner-qrp-1@netcom.com Mon Feb 13 17:50:44 1995
From: rossi@VFL.Paramax.COM
Message-Id: <9502131812.AA01588@gvlf9-a>
Date: Mon, 13 Feb 95 13:12:14 EST
Subject: ** REMINDER ** CW FOX Schedule for this week

February 13, 1995

FOX SCHEDULE - CW

Week of:	FOX	Date	Time(UCT)	Freq
Feb 12th	WA3NNA	Feb 17	0200-0300	7.110 +/- QRM
			0300-0400	7.040 +/- QRM
This is Thursday evening (Feb 16) local time in North America.				

***** NOTE: Times are one hour later than shown in the original
posting dated February 7

Pete Rossi - WA3NNA
rossi@vfl.paramax.com

From owner-qrp-1@netcom.com Mon Feb 13 23:27:27 1995
From: FOXG@WCSUB.CTSTATEU.EDU
Date: Mon, 13 Feb 1995 21:11:23 -0500 (EST)
Message-Id: <950213211123.278106be@WCSUB.CTSTATEU.EDU>
Subject: 30 meters

Been banging out some CQ's with my one watt 30/40 and was wondering how many of you actually get on 30? Do you congregate on 10.116 or just go anywhere? Before I was smitten by QRP, I used to stay exclusively at the low end. I'm sure there were many times when I didn't even get as high as 10.116... even with a dead band.

Geoff WA1U (currently calling CQ to a dead band on 10.116)

From owner-qrp-1@netcom.com Mon Feb 13 20:46:25 1995
Date: Mon, 13 Feb 1995 13:18:05 +0001 (EST)
From: Timothy M Huntington <tmh@world.std.com>
Subject: 40-40 Problem--Help!
Message-Id: <Pine.3.89.9502131349.A257771-01000000@world.std.com>

I've had a NE 40-40 QRP kit for about six months. The receiver works really well. The transmitter produces a signal, but it's so weak I

don't think anybody can hear me. I've tried calling plenty of loud, close stations using short skip, with no result. Does anyone have any suggestions on how I can increase the power, even a little?

The technical details:

1. I accidentally applied an over-voltage to the power transistor that came with the kit, so I'm using a 3053 from Radio Shack instead.
2. When I turn the rig on, the receiver doesn't work until I transmit a sort dit, then it comes crashing in.
3. I've built the test-circuit that's included in the 40/40's instructions, and the output is 12 volts. This isn't a problem: I can adjust it even higher, but following the advice in the instructions, I haven't.
4. When I hook a PR-4 lightbulb up to the transmitter, it lights up a little, but not at all brightly.
5. When I transmit, TV reception of channel 5 gets scrambled. This includes when I run the rig off of a 12-volt battery, so I guess this means it is transmitting, and it isn't just going from my power supply into the house wiring (which I've heard is possible-- is it?).
6. I've used RG58 from the board to a UHF connector.

Questions: Is there anything I can tweak, other than the capacitors and the variable resistor, to increase power? Is there a power transistor that would give me a little more power, AND that will work in this circuit, and that is reasonably available? How hard would an amplifier circuit be, to get my power up to a few watts, rather than less than one, where I think it is now? Has anybody seen any circuits like these in any magazines?

This is my only HF radio, and I would really like to get it up and working. It is, by far, the most complex kit I've built to date, and I only have a rough idea how it works-- so, HAVE MERCY! Thanks in advance for any help anyone can give.

73, Tim Huntington
 N1PAZ
 tmh@world.std.com

From owner-qrp-l@netcom.com Mon Feb 13 13:50:47 1995
Message-Id: <9502131435.AA16201@us4rnc.pko.dec.com>
Date: Mon, 13 Feb 95 09:35:12 EST

From: "N100Q Tom R. @ MR01 13-Feb-1995 0919" <randolph@est.enet.dec.com>
Subject: RE: Answer to your questions

> Let me know how it goes. It was worth it to me. I really don't think BNC
> connectors are appropriate for HF work.
> Rob, WA3ULH

Really? How come?

I like them quite a bit. In fact, I've made it our house standard RF connector (wife's a ham, too) and replaced all "UHF" where possible. Water-resistant, simple, 50 ohm, and in the QRP spirit, SMALL. Buy name brands at the flea markets and you can get 'em as cheap as the Taiwan "UHF's" at RatShack.

Connector Wars II - the BNC Strikes Back!

-Tom R. N100Q randolph@est.enet.dec.com

From owner-qrp-l@netcom.com Mon Feb 13 13:08:43 1995
Date: Mon, 13 Feb 1995 08:58:17 -0600 (CST)
From: Jeff Gold <JMG@tntech.edu>
Subject: ARCI-thoughts
Message-Id: <01HMZTV8B66ACZ07LQ@tntech.edu>

OK,

I have been emailing with Mike C. I have very strong feelings about QRP and would love to see more become of the ARCI.

Many of you are fortunate enough to be places where they have more or less local QRP groups.. by far the best way.. I have almost thought of moving to Northern California just to join Norcal :) would love to go to meetings and see what everyone has done and get to talk live with people designing the rigs I build. There is no chance of a local club here, the closest I can come is to have a once a year QRP expedition with the university club here.

I think there are now many QRPers on the Internet. I believe that we are now a solid international group. We have fox hunts and sometimes do contests as part of this group. I kinda think the Internet group is a good representation of the hobby. I have made many friends.. never met them, but consider them friends over the Internet, and probably keep in closer contact with this group than with the local ham club.

I think the ARCI has good possibilities to become a backbone of QRP operation. Maybe there is some way to tie the two groups together.. with Packet access to Internet and so many people

having Internet capabilities.. never know what could happen.

OK, thanks for listening.. hope I didn't bore you.

have a good day.

73,72 and still counting :)

Jeff, AC4HF

From owner-qrp-l@netcom.com Mon Feb 13 13:36:07 1995
Date: Mon, 13 Feb 95 09:34 EST
From: Bob Smith <0005512847@mcimail.com>
Subject: BNC and the like
Message-Id: <71950213143417/0005512847NA2EM@MCIMAIL.COM>

I though I'd chime in here with my two cents. I like the RCA connectors - they are very cheap and easily found. All of the BNC's I find are crimp type and the ones I buy are like \$3-\$5 in cost. They do seem to have it better over PL259's as easier to solder and over RCA's as more mechanically sound (they won't pull off as easily).

This being the case (and does it really matter anyway!) - is there and electrical advantage over any of the 3 plugs at HF - since we do have to squeeze everything out of our signals.

From owner-qrp-l@netcom.com Mon Feb 13 08:16:41 1995
From: JimN00CT@aol.com
Date: Mon, 13 Feb 1995 07:27:16 -0500
Message-Id: <950213072712_20476704@aol.com>
Subject: Re: BNC connectors inappropri...

I'll add my two cents here:

One person wrote that standardization is important. Granted, but the fact that all your ancillary equip has SO-239's isn't a real logical reason to use PL-259's--the cable has two ends %^). Standardization is a good idea, and each should have their own standard, unless involved in RACES or ARES, where one had better standardize with the group. I have standardized with BNC's--much easier to put together, and as I stated earlier, the cables have two ends.....

I don't have an iron big enough to properly make up PL-259's which is why I find them difficult to work with. As Mike pointed out, they are cheap though.....

So what's the moral? There is no moral--we're talking &^%*\$ connectors here.

For the homebrew and QRP newbies out there, get used to using a standard antenna connector--PL-259, BNC, RCA, PDQ, 23, 31, HIKE! Just remember to have the right cables when you go to Field Day (or the April Fools Outing.....)

72, 73, whatever it takes..... Jim N00CT

PS, Anybody have a real unhealthy hate of RCA connectors for antennas like I do? Let's form a support group.....

From owner-qrp-l@netcom.com Mon Feb 13 17:13:32 1995
Date: Mon, 13 Feb 1995 07:19:14 -0800 (PST)
From: Monte Stark <ku7y@sage.dri.edu>
Subject: Re: BNC connectors inappropri...
Message-Id: <Pine.SUN.3.90.950213071634.5387A-100000@nimbus>

Well Jim,

Some of us can still remember when we couldn't afford connectors period.

Just soldered the zip cord feedline (or 300 ohm tv line if we were lucky) or ladder line etc to the swinging link on the tank coil.....

Ahhhhh, the gooood olde dayes....

72's, Ron

.....KU7Y.....Monte "Ron" Stark.....
....ku7y@sage.dri.edu.....Sun Valley, Nevada....
.....ARRL.....NorCal #330.....NRA LIFE.....

From owner-qrp-l@netcom.com Mon Feb 13 15:08:59 1995
Date: Mon, 13 Feb 95 08:55:48 MST
Message-Id: <9502131555.AA18395@rgfn.epcc.Edu>
From: ab253@rgfn.epcc.Edu (Andrew Hair)
Subject: Colorado QRP Club Contest Results

To all:

Well, I only managed to find a few hours in Sunday's schedule to operate in the Colorado QRP Club Winter QSO Party. I found it to be a frustrating experience on 40 meter CW because of some QCWA CW contest swamping the band. I couldn't compete so I went SSB!

Fortunately, 10 meters was open so I gave that a try. Got too carried away ragchewing to rack up many QSO's but in a couple hours of work, I did manage 13 QSOs, 8 states, and 8 unique names for 2,688 points.

Did anyone else out there work the contest? If so, what were your impressions? I want to thank the Colo Club folks for the effort. Maybe I'll have more time for next year's contest.

72 es 73

Andrew Hair - AB5WB

--

From owner-qrp-1@netcom.com Mon Feb 13 21:16:30 1995
Subject: Re: Connectors for module
From: brian.carling@acenet.com (Brian Carling)
Message-Id: <2a6.10755.500@acenet.com>
Date: Mon, 13 Feb 1995 18:11:00 -0500

>From: brian.carling@acenet.com

Great discussion guys. I find BNC connectors a PAIN to use, and especially to attach COAX to them!

Derry VE7QK (jds@freenet.vancouver.bc.ca) writes:

JDS>> Any better ideas for doing the connections?

JDS>>

JDS>Yes. Hardwire the modules together before all these goldplated
JDS>connectors wind up costing you more than the modules themselves! What's
JDS>wrong with Molex type connectors if you must take them apart without a
JDS>soldering iron? 72 Derry VE7QK

We always used to use common barrier strips, even back in the tube days. A homebrew transmitter almost always had a barrier strip where you attached the wires going over to the power supply, etc. That was because it was cheap and got the job done! Now, I know a lot of people used octal connectors, like the tube sockets, or the same with more pins, like 11 or so, but that involves a lot more work, cutting the holes etc. and besides if you were a cheapskate like me, you had to watch you didn't get cut on the glass re-using those old tube bases as free connectors!

72 de AF4K

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      | Radio AF4K  
      | Gaithersburg, MD  
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      | brian.carling@acenet.com  
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~ SLMR 2.1a ~ Make a joyful noise unto the Lord!

From owner-qrp-l@netcom.com Mon Feb 13 22:54:49 1995

Message-Id: <v01510102ab657ebfca44@[149.82.22.63]>

Date: Mon, 13 Feb 1995 15:55:41 -0800

From: xenolith@halcyon.com (Kevin Purcell)

Subject: Re: Connectors for modules?

>> When building modules in separate boxes, for example VFO+TX+RX+Extras,
>> signal connections are best made with BNC and coax. But what is best
>> for the sundry control lines and power?

>

>Maybe DB9, DB25, etc. connectors? I have gotten by with feedthru
>insulators and hookup wire to interconnect; perhaps coax braid around the
>lines would be an extra help.

>

>The ultimate might be from Mouser Electronics: there is a series of mixed
>contact D-sub connectors that could in theory handle everything except
>perhaps high power RF. You can get plugs and sockets with some fixed
>small pins, and/or some slots for user installed high voltage, high power,
>or coaxial contacts (50 or 75 ohm no less!).

I think the ultimate would be Lemo connectors (available in several different styles). These are beautifully made locking connectors rather expensive but very reliable and rated for reasonable currents too (amps). They come in several forms: for coax (50 ohm, no impedance bump) for RG-174 and RG-58 sizes and multipole (2, 3, 4 and more) for low frequency or power

connectors. We used to use them on a lot of scientific equipment when I did science in the UK (ah, the good old days!).

Any ideas on suppliers or prices in the US?

73

Kevin, N7WIM

Kevin Purcell work: kevinpu@atm.com home: xenolith@halcyon.com N7WIM
Seattle dBug Mac Developers SIG organizer (motto: "We need you!")

From owner-qrp-1@netcom.com Mon Feb 13 21:22:56 1995

From: N5EM@aol.com

Date: Mon, 13 Feb 1995 19:32:45 -0500

Message-Id: <950213173130_20863973@aol.com>

Subject: Dashed Dayton

Gawd, What tragedy! To suddenly discover that your company has scheduled its National Sales Conference the same weekend as Dayton, that attendance is mandatory, and that its in Phoenix, for God Sake! (Please, nothing personal if you live in Phoenix.)

I shall go get drunk now, I think.

72

Ed

From owner-qrp-1@netcom.com Mon Feb 13 20:19:04 1995

Date: Mon, 13 Feb 1995 12:06:59 -0600 (CST)

From: Jeff Gold <JMG@tntech.edu>

Subject: Final QRP+ Info

Message-Id: <01HN00GPRTYACZ07LQ@tntech.edu>

OK,

I just got off the phone with Bruce at Index Labs.. here is the deal (and he is happy with it, and I am. .so this is it)

If we get 10 or more (currently have over that amount that have said definites) the cost is:

rig \$510

mike \$ 28

US ship \$ 10

*** if 20 or more order the price will be \$530 for unit with

mike +shipping (so \$540 with mike shipped US.. I am happy with this)

* foreign shipping is ok, except to France, the shipping cost on foreign is \$40-60 and local shippers are in charge of collecting taxes and duties. The foreign ship is UPS-Expedited service and is very quick (I thought he said 4-6 days).

The Details:

They take Master Card or Visa, the only way that we can do the group discount is for me to take all the info and get it to him at once (not what I wanted.. but I got myself into this). I guess I will be taking orders till Friday.. not sure about emailing charge info.. so up to you, you may want to use snail mail.

-You will need to send a check or complete charge info (name of card, number, exp. date)

-you will need to send me your complete ship to address with a daytime phone number

sure hope I didn't forget anything.

73

Jeff, AC4HF

From owner-qrp-1@netcom.com Mon Feb 13 20:17:56 1995
From: David Adams <dave@flowserver.stem.com>
Message-Id: <9502132202.AA29834@flowserver.stem.com>
Date: Mon, 13 Feb 95 13:57:12 -0800
Subject: Group buys

Sorry to waste the width guys, but this is getting a bit ridiculous. Group buys are NOT bad for the manufacturer. If the group here manages to get 20 or so people to purchase these rigs, I would be willing to bet, contrary to a previous posting, that not all of these individuals were intending to ever purchase the rig. I certainly wasn't, but with the possibility of getting \$90 knocked off (certainly NOT a piddling amount to me or my family), I just may be able to manage the purchase. End result of a group purchase is that more rigs are sold and profits are made up in bulk. In addition, if there are more rigs out there, there is more word of mouth which results in more future sales.

Beyond all of that, the manufacturer decides whether to offer a group discount. Nobody has said offer a discount or no rigs will be bought. The manufacturer already has this policy in place. Because of the above benefits, he knows he can lower the price of the rig by x dollars if he is given y sales. It's good business. If he couldn't afford a group discount, he wouldn't offer it.

Maybe instead of complaining about the fact that someone has made it possible to buy these rigs a little easier we should be trying to get more people into the group buy so that the fine qrp+ folks get a bit more dough. ..

Whatever...

Dave

From owner-qrp-1@netcom.com Tue Feb 14 00:05:15 1995
From: Byron8LCZ@aol.com
Date: Mon, 13 Feb 1995 22:23:34 -0500
Message-Id: <950213183640_20912388@aol.com>
Subject: Re: Group purchase, QRP+

My guess is:

Index Labs may wait until they have at least 50 orders before ordering parts and having boards made. With a group order, this magic number may happen quicker and benefit everyone that has one on order. But then again, i'm just guessing.....

72, Byron WA8LCZ

From owner-qrp-1@netcom.com Mon Feb 13 11:37:48 1995
From: N5EM@aol.com
Date: Mon, 13 Feb 1995 10:37:05 -0500
Message-Id: <950213103529_20574381@aol.com>
Subject: HF Connectors

Just an additional 2 cents worth. I have the shack wired primarily with PL259's for the same reason already mentioned. Everything comes that way from the manufacturer when you buy commercial gear.

BUT, when I build stuff to go into the field, I hate them. Too big and too heavy. I always shyed away from phonos because it seemed I always ended up with one for power and one for the antenna (disaster just waiting to strike). But, that was before I saw the light! With the coaxial power connectors now

in use, there is no longer any reason to have two i/o connections on a portable rig the same. SO, I vote for the RCA phono (I can hear Jim groan from Houston). There are several types of dielectric available. Our local parts store in Houston (and if you ever get here you HAVE to get by City Electronic Supply) has carried phonos for years with certain types marked "RF", meaning they have a phenolic dielectric in the middle.

While probably not significantly lighter than a BNC, still the lightest thing I have found short of an SMA and I ain't about to start buying those for HF QRP.

If you are carrying these things in your car or briefcase, you probably don't care, but if you are backpacking this stuff, those PL259's add up. I notice that Wes Hayward used BNC's on his stuff back in the 70's and 80's. Real backpackers know. To quote the old adage, you count the ounces and the pounds take care of themselves. Even used RG-174 feedline for my first 40 meter backpack rig. (Total length about 40 feet to a matched dipole.)

BTW, Jim, if you form your support group, I'll volunteer to do some counseling.

72

Ed Manuel - N5EM
n5em@aol.com

From owner-qrp-l@netcom.com Mon Feb 13 18:37:57 1995
Message-Id: <n1419440804.46967@msmailgw1.arlut.utexas.edu>
Date: 13 Feb 1995 13:20:42 -0600
From: "rohre" <rohre@msmailgw1.arlut.utexas.edu>
Subject: Mobile antennas inside vehicle

Wayne and the group,
Some years ago I had a VW beetle, and liked to listen around the SW BC bands and the ham bands on the way to and from work. I was not keen on putting a rig and external whip on such a small car.

The receiver at that time was the mid-60's portable made by Standard of Japan, which was a little smaller than the old Zenith trans-oceanics, but styled as one of those as a table top receiver. It was one with D cell power, and a BFO, covers 1-30 MHz.

I would set it on the passenger seat in front, and extend its whip as tall as I could from the top of its case; and enjoyed many an hour of listening. The pickup of the whip even inside the car was quite good. There were problems with ignition noise, that resistor plugs and/or wires would help. Any on the body antenna would suffer from possible computer noise in the vehicle today.

I do know of someone nearby who loaded up the pipe rack on his pickup truck,

but insulating its attachments to the body and claimed good 80 and 40 meter operation even transmitting. The matching network was a little obvious, however, requiring a tapped coil to cover all bands. Another rack antenna I have seen used is the luggage rack on a van, insulated from the body, and gamma matched.

I have a friend here who works on fleet RFI problems from the vehicle computers, he says to take a pickup coil on a receiver, and probe around the proposed mounting areas for antennas, either external or on glass and make sure you are not a hot spot for the vehicle computerized fuel pump in the gas tank, the main computer, the brake computer, etc. It is getting harder to get low noise in a mobile; at least until '96, when they start using wired LAN's for the distributed computers that will appear on those models.

From owner-qrp-1@netcom.com Mon Feb 13 12:50:53 1995
Message-Id: <9502131409.AA16923@us1rmc.bb.dec.com>
Date: Mon, 13 Feb 95 09:09:11 EST
From: Bill Acito 13-Feb-1995 0902 <acito@asdg.enet.dec.com>
Subject: Norcal 40 and Audio

Thanks to the person who posted the info on the little Radio Shack 1w audio amp; I put one into my Norcal 40 over the weekend, and I'm really pleased. I cut the trace between the last electrolytic and the jack and inserted the line there. The small board is nylon tie-wrapped to one of the mounting posts.

I also rewound the big torroid to get the rig down into the QRP calling frequency range (59 to 62 turns). I used 30 gauge instead of 28 with no ill effects.

Question: Before and after, I only seem to have 25kc of band spread. Is there a mod or component change to get the VFO to go wider? I'd only like 10 or 15 more Kc's (7024-7063?)

b

. - I own my own words -

Bill Acito
acito@asdg.enet.dec.com

|d|i|g|i|t|a|l|
Hudson, MA

KC1GS/qrp, QRP-NE #260

From owner-qrp-1@netcom.com Mon Feb 13 16:34:44 1995
Message-Id: <9502132032.AA08725@garnet.inel.gov>
Date: Mon, 13 Feb 1995 13:33:59 -0700
From: LVE1@inel.gov (Larry East)
Subject: NorCal 40A's Shipping Yet?

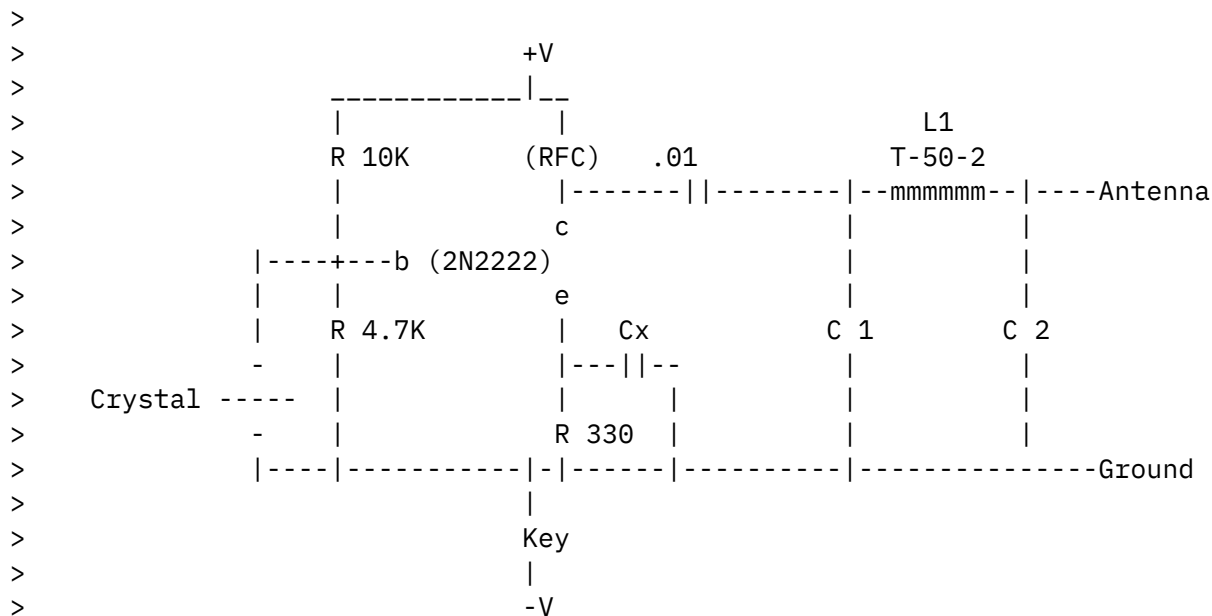
Anyone have (or willing to give...) any info on the status of the NorCal 40A kits? I'm keeping my soldering iron hot and ready to go!

73E-2, Larry W1HUE/7

From owner-qrp-l@netcom.com Mon Feb 13 15:41:11 1995
Date: Mon, 13 Feb 1995 10:58:52 -0800
From: myers@bigboy73.West.Sun.COM (Dana Myers)
Message-Id: <9502131858.AA02070@vr1000.West.Sun.COM>
Subject: Re: QRP Pen circuit

> From: Michael Marmor <mmarmor@pluto.njcc.com>
> Subject: QRP Pen circuit
> To: CEBIK@UTKVVX.UTCC.UTK.EDU
> Date: Sat, 11 Feb 1995 01:32:08 -0500 (EST)

> Here is the schematic again so you can follow what I am talking about.



> The Filter:

Is this really a filter, or a matching network? The answer is, it is both. What is the difference? When you design an LC network to have a specific frequency response (i.e. low-pass, high-pass, etc.) with the same input and output impedances, then I'd say you're designing a filter.

When you design an LC network to transform one impedance to another, you are designing a matching network.

When you design an LC network to have a specific frequency response while transforming one impedance to another, you are designing both a filter and a matching network.

It just so happens that most matching networks also offer some kind of filter response (usually low pass), so you often see one configuration doing both.

> The book gives component values to build the circuit for the 30, 40
> and 80 meter bands by adjusting Cx, C1, C2 and L1. The values for
> both 30 and 40 meters closely meet expected values for a 0.1 dB ripple
> Chebyshev low-pass pi-filter according to charts in the Handbook. Yet
> the 80 meter values seem wrong. I checked 1, 0.1, 0.01 and 0.001 dB
> ripple 3-pole filters and none of them seem to match the book values.
> Does the 80 meter version use a different type of filter than the other
> bands or is it a mistake? Here are the values from the book and my
> calculated inductance for L1 based on the number of turns on a T50-2
> torriod.

>

> Band	C1, C2, Cx	Turns on a T50-2	Calculated L
> 30	330pF	14	0.98uH
> 40	470pF	17	1.445uH
> 80	680pF	34	5.78uH

You're trying to analyze the circuit by comparing what appears to be a filter to filter tables, which happened to work pretty well in this case. However, I'd suggest it is better to analyze exactly what the circuit is doing first, and then look it up.

What do I mean? Well, though it may look like magic at first, you can easily and quickly calculate exactly collector load is being presented in each of the above bands. How? You combine the impedances, using the impedances for series connected items and the inverse of impedance, admittance, for parallel connected items. The twist is that all the math is best done as complex values, using the form:

$$R + jX$$

where:

R = real resistance

X = reactance, negative for capacitive, positive for inductive.

For example, let's evaluate the 80m circuit (I use an HP 32SII to do the complex math). I do this by combining Rload (50 ohms) with C2 in parallel, then adding in L1 in series, then combining C1 with the result. If that isn't clear, try re-writing the schematic with Rload and C2 replaced with a series R/C circuit, this in parallel with C1. Keep in mind all of this is done with impedances, so reactive components, like L and C, are first turned into impedances at a given frequency. Let's use 3.58MHz so Herman can use a colorburst rock :-).

Freq = 3.58MHz

$Z(L1) = (0, 130.0)$ ($R = 0$, $XL1 = 130.0$)

$Z(C1) = (0, -65.4)$ ($R = 0$, $XC1 = 65.4$)

$Z(C2) = (0, -65.4)$

$Z(Rload) = (50.0, 0)$

Let's call the parallel connection of Rload and C2 Z2:

$Z2 = 1/(1/Z(C2) + 1/Z(Rload))$

$Z2 = (31.6, -24.1)$ (equivalent to $R = 31.6$ in series with $C = 1845\text{pF}$)

Now, add in the series L, getting Z1:

$Z1 = (31.6, -24.1) + (0, 130.0)$

$Z1 = (31.6, 105.9)$ (equivalent to $R = 31.6$ in series with $L = 4.7\mu\text{H}$)

Now, add in the parallel C1 to Z1:

$Z1 = (51.2, -131.0)$ (equivalent to $R = 51.2$ in series with $C = 339\text{pF}$)

This example is hard to simply write down, try working it a few times with something the ARRL Handbook open to the AC circuits section.

Remember, combining parallel impedances requires taking the inverse ($1/Z$) of each impedance and adding them. Take the inverse of the sum to turn it back into an impedance.

So, the 80m circuit presents a load of nearly 50 ohms to the collector, but it is series with a fairly large amount of capacitive reactance (the .01uF capacitor in series with this doesn't significantly change the values). Since you really want a non-reactive collector load, what do you do about that 130ohms of capacitive reactance? Well, the collector choke (RFC in the circuit) is effectively in parallel with the collector load. If the RFC has 130 ohms of inductive reactance, it will cancel the capacitive reactance out, leaving a resistive 50 ohm load. At 3.58MHz, L1 already

has an impedance of 130 ohms! This suggests winding two inductors like L1, and using one for the collector choke as well as the output filter.

Using the recommended values for each band:

At 40m, say 7.040MHz, the collector load is $84 - j16$.

At 30m, say 10.125MHz, the collector load is $80 - j13$.

At 40m and 30m, the same load, about 80 ohms, is presented to the collector, in series with a fairly small amount of capacitive reactance. I would say that you can ignore the capacitive reactance in these cases.

> Collector Impedance:

> My questions about why the oscillator stopped at certain settings of
> my transmatch (and into a 50 Ohm dummy load!) resulted in several mails
> about collector impedance. A related issue was why my wattmeter
> read 25mW output at high SWR and only 5mW output at lowest SWR.
> I am still foggy about how these things are related. I did get
> this much from previous posts:

>

> Load on Collector = $RL = (V_{cc} - V_{ce(SAT)})^2 / 2 * P_o$

>

> Assuming $V_{ce(SAT)} = .5v$ (from a previous post)

> $P_o = .25$ (from the text of the K4TWJ book)

> $V_{cc} = 9v$

>

> Then collector impedance is 144.5 Ohms and SWR would be 2.78

Can you please explain where the SWR would be 2.78? Remember, for a .25W output with a collector supply of 9V, a load of 145 ohms must be *presented to the collector*. The collector *does not* present a load of 145ohms, at least not as a result of the desired output power.

Don't bring in the variable of SWR at the collector; (a) you've probably got the wrong value and (b) it isn't significant to analyzing the circuit. In fact, I'd strongly suggest forgetting about SWR and doing impedance analysis instead.

> Help me sort all this stuff out!! Why does my circuit have 50 times
> less power output than what the book says it should have?

This circuit is simply a Colpitts crystal oscillator. The output loading network influences the amplitude and phase of feedback to the crystal; under some loading conditions, the oscillator feedback is no longer of higher enough amplitude (or correct phase) to sustain oscillation. The feedback to the crystal is developed at the emitter, through the base-emitter capacitance and emitter capacitor. The base-emitter capacitance is small, and may vary greatly from one transistor to another.

But, as others have already pointed out, the reason your circuit doesn't put out .25W may have to do with the transistor being a little weak, or the crystal not active enough.

Frankly, I think attempting to extract 250mW from a single stage crystal oscillator is not a good idea; the general approach I've seen in many published projects is to have a transistor oscillator followed by an amplifier stage. This tends to be more frequency stable and less prone to chirp (yup, crystal oscillators do chirp ;-).

> Whew!! Why is learning so complicated?

From owner-qrp-l@netcom.com Mon Feb 13 17:09:47 1995
Date: Mon, 13 Feb 95 08:41:17 ast
From: "Jim Larsen" <jlarsen@alascom.com>
Message-Id: <9501137926.AA792694120@mailrouter.alascom.com>
Subject: QRP Plus

Let's see. 17 to 20 people interested.....times a 90 dollar reduction. The manufacturer has to give up \$1800....each ham saves \$90. (Kind of a piddling amount...that \$90)

Hmmmm.....Maybe we should all vote to Pay \$510 but every one give the manufacturer a \$90 bonus for such a fine rig and to encourage him to do more. \$1800 would pay for a lot of experimenting with new product if we let it happen.

What if the manufacturer said NO decreases in price. I would bet that almost all 20 people would still buy the rig.

I guess I vote to keep it simple and pay the full \$595-600.

QRP hams help other QRP hams to stay in business.

73,

Jim
AL7FS

-----Forward Header-----
Author: (James M Fitton +1 508 960 2577)
Subject: QRP Plus
02-12-95 08:06 PM

Gang,
The QRP Plus is a GREAT rig for the money.

Quibbling over a few dollars could discourage the manufacturer. Let's not push it too far. The guy is operating a small business out of his basement.

Statistics show that half the people in this world are below average. QRPers however, are far above average when it comes to frugality. Discouraging the supplier may be a fair price to pay for us not having to battle against our frugal nature.

Please think about what we mean to each other.

72 W1FMR

From owner-qrp-l@netcom.com Mon Feb 13 20:10:59 1995
Subject: Re: QRP Plus
Date: Mon, 13 Feb 1995 15:35:21 -0800
From: Clark Savage Turner WA3JPG <turner@safety.ICS.UCI.EDU>
Message-Id: <9502131535.aa03752@paris.ics.uci.edu>

Yikes, let's not go too far! Maybe most of us are middle class or better (my guess is most hams must be, except for a few of us QRP'ers) - but saving some money on a good QRP rig is not something we need to avoid!!!!

Point well taken on QRP manufacturers needing to stay in business.

My suspicion is that the fellow who makes the deals for the QRP-plus is a big boy, capable of making his own decisions. Second guessing his offer to us seems a silly thing to do....those concerned probably ought to call him up personally and either:

1. offer donations, or
2. ask (like any good co-dependent QRP'er) if he can really afford to offer us such a good deal on his radios.

And, hey, if you call up and he really finds that he made a bad decision and needs to be let off the hook for the large sale he is about to make (and most likely would NOT make without this group offer being considered) then we can all think about going back to the status quo - some of us unable or uninterested in buying the QRP plus as individuals at full price - with all the attendant less publicity and less good will. Hmmm.... I think that the QRP plus deal going on at this discount may do more for the company in the long run than just individual sales. Maybe that guy made a real good decision.

Clark
WA3JPG

From owner-qrp-1@netcom.com Mon Feb 13 22:23:45 1995
Date: Mon, 13 Feb 1995 16:11:57 -0800 (PST)
From: Monte Stark <ku7y@sage.dri.edu>
Subject: QRP Plus
Message-Id: <Pine.SUN.3.90.950213154932.10214B-1000000@nimbus>

Hi All,

I think I side with the full price side of this one.

At work, I spend from \$25k to \$100k per year with vendors all over the US. I try to avoid those who offer their goods far below the competition. Experience has shown that they can seldom offer any after sales service.

Good vendors are a valuable asset. The same is true for our hobby.

Just my 2 cents.....

72's, Ron

.....KU7Y.....Monte "Ron" Stark.....
....ku7y@sage.dri.edu.....Sun Valley, Nevada....
.....ARRL.....NorCal #330.....NRA LIFE.....

From owner-qrp-1@netcom.com Mon Feb 13 12:58:29 1995
Message-Id: <9502131648.AA04604@garnet.inel.gov>
Date: Mon, 13 Feb 1995 09:49:40 -0700
From: LVE1@inel.gov (Larry East)
Subject: QRP Rigs for sale

Seen posted on Packet last night:

Rig: TenTec Rigosy II with 8 pole xtal filter, audio filter filter,
digital readout and power supply. \$425.00
Contact: KU8P, 517-349-1584

Rig: Heathkit HW-8 -- no mods or extra holes. \$125 (US) + shipping.
Contact: Ian, VE7CKB, no phone number.
Packet: VE7CKB@VE7KIT.#VANC.BC.CAN.NOAM

"Any opinions expressed herein are my own and probably do not agree with those of my employer, the U.S. Government

or my spouse"
--... ..--
Larry V. East (W1HUE)
Idaho Falls, ID
e-mail: LVE1@inel.gov
Packet: W1HUE@WT7B.ID.USA.NOAM
work: (208) 533-4005 home: (208) 529-2162

From owner-qrp-1@netcom.com Mon Feb 13 22:10:08 1995
Message-Id: <9502131957.AA08260@garnet.inel.gov>
Date: Mon, 13 Feb 1995 12:58:53 -0700
From: LVE1@inel.gov (Larry East)
Subject: RE: QRP Rigs for sale

Scratch the Argosy II in my previous posting; someone on the list already bought it!

"Any opinions expressed herein are my own and probably do
not agree with those of my employer, the U.S. Government
or my spouse"

--... ..--
Larry V. East (W1HUE)
Idaho Falls, ID
e-mail: LVE1@inel.gov
Packet: W1HUE@WT7B.ID.USA.NOAM
work: (208) 533-4005 home: (208) 529-2162

From owner-qrp-1@netcom.com Mon Feb 13 18:45:14 1995
From: PeterWK8S@aol.com
Date: Mon, 13 Feb 1995 11:29:16 -0500
Message-Id: <950213112914_20607536@aol.com>
Subject: Re: QRP+ purchase cheaper

I agree with Byrons statement against asking Bruce Franklin for lower (group) pricing. Forget trying to drive the price lower on the QRP Plus by demands.

Without reasonable profit there is no possibility for any business to succeed, much less, have funds to put into research and new product development. We all want companies like Index Labs that produce high quality Amateur Radio products to thrive. It's in our best interests to support and encourage their success.

I purchased a QRP + over a year ago for \$595 and still believe I got a GREAT radio at a GREAT price. Let's be careful we view things realistically. In this case you do get what you pay for and then some.

From owner-qrp-1@netcom.com Mon Feb 13 19:47:55 1995
Date: Mon, 13 Feb 95 13:39:55 cst

From: gmarcus@redstone-emh2.army.mil
Message-Id: <9501137927.AA792712019@ccsmtp.redstone.army.mil>
Subject: RF Power Measurements

Craig WB3GCK writes;

>I connected the Bird wattmeter in series with the MFJ cross-needle wattmeter
>in my antenna tuner. I found that the MFJ was giving significantly higher
>readings than the Bird meter. Unfortunately, the only slug I had for the Bird
>was a 50 watt unit. Thus, resolution at the very bottom of the scale wasn't
>all that great. But at least I knew the MFJ *was* reading high.....
>.....I took readings with both meters on each band at approximately 1 watt
>and 5 watts (as indicated by the Bird wattmeter).

Caution must be used when using a meter such as the Bird wattmeter at the lower part of it's range. The Bird wattmeter's accuracy is specified as +/- 5% of full scale (if my memory serves me correctly). The measurement uncertainty when using the 50 watt scale is therefore +/- 2.5 watts throughout the measurement range. When attempting to measure 5 watts on this range our measurement uncertainty is 5 watts +/- 2.5 watts or +/- 50%. The most accurate measurements are made using the upper portion of the scale.

72/73...Gene Marcus W3PM/GM4YRE
w3pm@amsat.org

From owner-qrp-l@netcom.com Mon Feb 13 03:11:50 1995
Message-Id: <199502130547.VAA27664@holonet.net>
Subject: Scope bargain
Date: Sun, 12 Feb 95 21:47:05 PST
From: John Seboldt <rohrwerk@holonet.net>

Some may laugh, but for this hobbyist with little money, I think it's a steal... at our local Midwinter Madness hamfest this weekend, got a Tek 547 scope, very clean, with the four-channel amplifier good to 50 MHz -- for \$35! This replaces my 533 scope, a bargain that I got with cart for \$50 4 years ago, which, coincidentally, just started developing some glitches about a week ago (tubes or whatever).

Unfortunately, the nice 4 trace module doesn't work, but from the included manual I conclude that the most likely culprit is the (only) tube in the plug-in. So meanwhile I can plug in my older modules and get an astonishing 30 MHz bandwidth now :-)

OK, laugh you hi-tech lab types...

Also saw the 10 MHz-4 GHz spectrum analyzer plug-in for \$250 from a local consignment house I had never heard from. Is this worth the money if you're still back in the tube scope era?

John Seboldt K0JD
Minneapolis, MN

From owner-qrp-1@netcom.com Mon Feb 13 05:47:59 1995
From: ab4el@cybernetics.net (Stephen Modena)
Message-Id: <9502130803.AA04019@cybernetics.net>
Subject: SSB QRP Fox Hunt: WED 15 FEB EST -- KF8EE (fox)
Date: Mon, 13 Feb 1995 03:03:51 -0500 (EST)

!!!! Announcing this week's SSB fox hunt !!!!!

===> IMPORTANT: Pay attention to the *new* times <===

SSB QRP Fox: Ted KF8EE in OHIO

SCHEDULE: Times are EASTERN STANDARD on WED evening 15 February

EST TIME	BAND SEG	
-----	-----	
8:30--9:00 pm	7.225-7.231	(Not higher! The Century Club Net is on 7.2335 at that time!)
9:00--9:30 pm	7.210-7.220	Requires EXTRA/ADVANCED license
		<band hop period>
9:30--10:00 pm	3.780-3.788	Requires EXTRA/ADVANCED license
10:00--10:30 pm	3.900-3.910	

!!!! Did you catch the *new* times? !!!!!

[I had suggested these compromise times...on both bands. Ted graciously consented. Hopefully, it will give a chance to both coasts on 40 M. Let's see what happens on 75 M this week. Notice to West Coast: if you believe you can't hear OH on 75 M and don't try, then you *won't* work the fox! :^) I have made many 75 M SSB QRP QSOs to the West Coast from NC...the question is whether the West Coast dares to try. :^)]

--

73/Steve/AB4EL ab4el@Cybernetics.NET in Raleigh, NC 35.81245N, 78.65849W

From owner-qrp-l@netcom.com Mon Feb 13 02:10:00 1995
From: Mike.Czuhajewski@hambbs.wb3ffv.ampr.org (Mike Czuhajewski)
Subject: Re: The story, and the Pres
Date: Sun, 12 Feb 95 23:46:08 EST5EDT
Message-Id: <1995Feb12.234608.3417@wb3ffv.ampr.org>

For what it's worth, the status and future of the QRP ARCI has received considerable internal discussion recently, and continues in some circles. The annual meeting at Dayton should prove interesting. One thing I note, though, is that there are so many popular and successful QRP groups out there which share a common thread--they have the bulk of their members in a relatively small geographical area and can meet face to face within a few hours drive, and can communicate with each other easily. The QRP ARCI is more of a "chess by mail" club, with its power structure and membership scattered across the country, and that contributes to a lot of problems. The QRP ARCI has a de facto annual meeting at Dayton, and not all of the board members and officers can attend. Regional QRP groups can meet more often and have larger percentages of their power structure present. I think all the groups have their place; the regional groups have the advantage of being agile and responsive, attending to the needs of the local people, but we also need a national level QRP group, such as the QRP ARCI, which helps tie local groups together. The QRP ARCI also has an awards and contest system in place, which not many other clubs do. I am always happy to carry on private e-mail conversations regarding the problems and strenghts and future of the QRP ARCI. 73 and Queue Our Pea DE WA8MCQ
--

Mike Czuhajewski, user of the UniBoard System @ wb3ffv.ampr.org
E-Mail: Mike.Czuhajewski@hambbs.wb3ffv.ampr.org
The WB3FFV Amateur Radio BBS - Located in Baltimore, Maryland USA
Supporting the Amateur Radio Hobby, and TCP/IP InterNetworking

From owner-qrp-l@netcom.com Mon Feb 13 12:18:27 1995
From: PeterWK8S@aol.com
Date: Mon, 13 Feb 1995 11:27:49 -0500
Message-Id: <950213112428_20607660@aol.com>
Subject: Yet another Sierra...

Yet another Sierra lives!!! Probably one of the last of the 1st and hopefully not last kit runs from NorCal QRP Club.
After considerable trouble (self induced) with aligning the VFO due to severe loading from my frequency counter, I managed to get it aligned to the manuals specs. Everything then fell into place. It all works and I might add, very well! Torroids, torroids, torroids.....I've only managed to get 40 and 20 meter modules completed but I'm getting over 3 watts on 40 and bit over 2 on 20 meters. I'm very impressed with the board layout and quality. Good reports on my first few contacts so everything is looking good.
Now to some more windings... other band modules.

Pete WK8S